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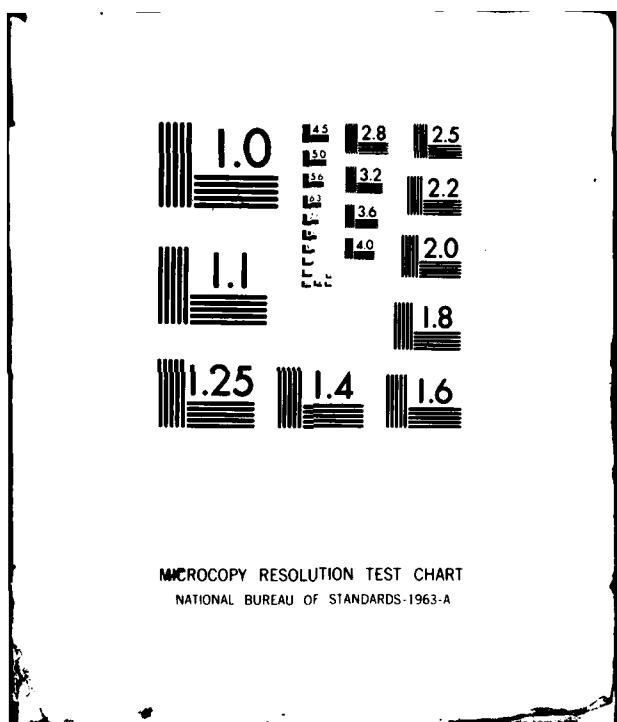
ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND WS--ETC F/G 4/2
193048 GSRS, MISSILE NUMBER 1081, ROUND NUMBER V-93, 7 DECEMBER--ETC(U)
DEC 79

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19. KEY WORDS (Continue on reverse side if necessary and identify by block number)		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Meteorological data gathered for the launching of the 19304B GSRS, Missile Number 1081, Round Number V-93 are presented in tabular form.		

CONTENTS

INTRODUCTION-----	1
DISCUSSION-----	1
LAUNCH AREA MAP-----	2
GENERAL AREA MAP-----	3
 TABLES:	
1. Surface Observation taken at 1530 MST at LC-33-----	4
2. Anemometer-Measured Wind Speed and Direction, LC-33 Fixed Pole, taken at 1530 MST-----	5
3. Anemometer-Measured Wind Speed and Direction, Tower Levels 1, 2, 3, and 4 taken at 1530 MST-----	5
4. LC-33 Pilot-Balloon-Measured Wind Data at 1530 MST-----	6
5. Nick Site Pilot-Balloon-Measured Wind Data at 1530 MST-----	7
6. WSD Significant Level Data at 1550 MST-----	8
7. WSD Upper Air Data at 1550 MST-----	9
8. WSD Mandatory Levels at 1550 MST-----	11

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Dist	Available/or Special
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INTRODUCTION

19304B GSRS, Missile Number 1081, Round Number V-93, was launched from LC-33, White Sands Missile Range (WSMR), New Mexico, at 1530 MST on 07 December 1979. The scheduled launch time was 1430 MST.

DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team. Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data were obtained by the following methods:

1. Observations

a. Surface

(1) Standard surface observations to include pressure, temperature ($^{\circ}\text{C}$), relative humidity, dew point ($^{\circ}\text{C}$), density (gm/m^3), Wind direction and speed, and cloud cover were made at the LC-33 Met Site at T-0 minutes.

(2) Anemometer data were provided from existing pole-mounted and tower-mounted anemometers at LC-33. Monitor of wind speed and direction from one anemometer was also provided in the launch control room.

b. Upper Air

(1) Low level wind data were obtained from RAPTS T-9 pibal observation at:

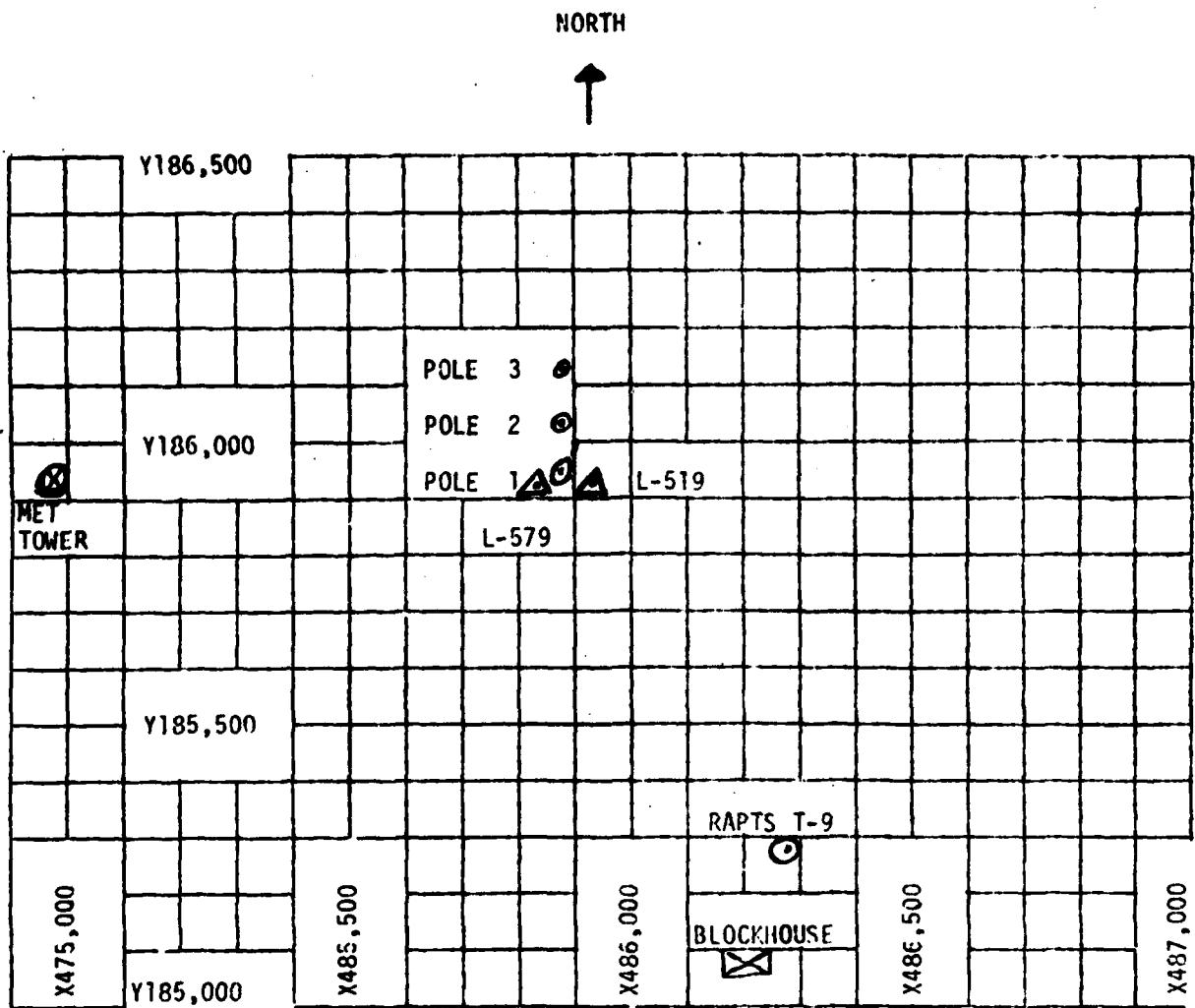
SITE AND ALTITUDE

LC-33 2Km
Nick 2Km

(2) Air structure data (rawinsonde) were collected at the following Met Sites. Data were collected from surface to 35,000 feet in 500-feet increments.

SITE AND TIME

WSD 1550 MST



1. MET TOWER - 4 Bendix Model T-20 Anemometers at 12 ft, 62 ft, 102 ft, and 202 ft with E/A recorders.
2. POLE ANEMOMETER - Bendix Model T-120 with E/A recorders.
 - (a) Pole #1 - 38.7 ft.
 - (b) Pole #2 - 53.0 ft.
 - (c) Pole #3 - 83.6 ft.
3. RAPTS T-9 Radar Automatic Pilot-Balloon Tracking System T-9 Radar.

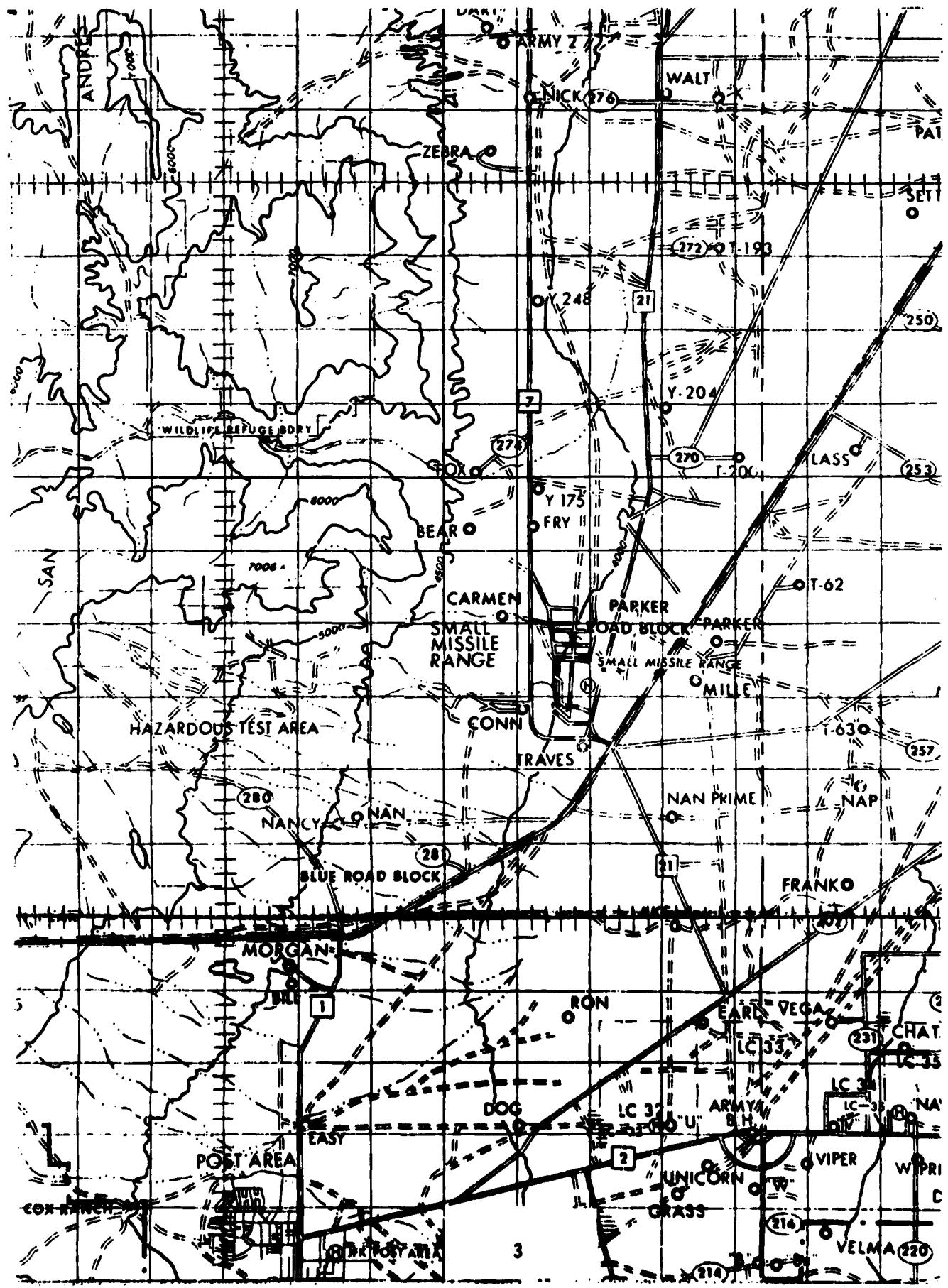


TABLE 1. Surface Observations taken at 1530 MST,
07 December 1979, at LC-33, 19304B GSRS,
Missile Number 1081, Round Number V-93.

ELEVATION	3977.30	FT/MSL
PRESSURE	879.4	MB
TEMPERATURE	17.3	°C
RELATIVE HUMIDITY	22	%
DEW POINT	-4.7	°C
DENSITY	1051	GM/M ³
WIND SPEED	02	KTS
WIND DIRECTION	142	DEGREES
CLOUD COVER	CLEAR	

TABLE 2 LC-33 FIXED POLE ANEMOMETER MEASURED WINDS

POLE #1			POLE #2			POLE #3		
X485,874.29			X485,874.93			X485,877.29		
Y185,958.90			Y186,012.00			Y186,116.06		
H4018.74			H4033.57			H4063.92		
38.7 ft. AGL			53.0 ft. AGL			83.6 ft. AGL		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
-30	120	04	-30	123	02	-30	138	03
-20	120	04	-20	120	03	-20	126	04
-10	120	04	-10	118	04	-10	127	04
0.0	120	04	0.0	116	04	0.0	126	04
+10	MISG	02	+10	MISG	04	+10	MISG	03

TABLE 3 LC-33 METEOROLOGICAL TOWER ANEMOMETER MEASURED WINDS (202 FT TOWER)

LEVEL #1, 12 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #2, 62 FEET X484,982.64, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
-30	132	03	-30	124	03
-20	132	03	-20	141	03
-10	144	02	-10	141	02
0.0	142	02	0.0	141	03
+10	141	02	+10	135	02

LEVEL #3, 102 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #4, 202 FEET X484,982, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
-30	117	03	-30	126	06
-20	116	03	-20	126	05
-10	116	02	-10	126	06
0.0	116	02	0.0	MISG	05
+10	114	03	+10	118	06

PILOT BALLOON MEASURED WIND DATA

TABLE 4

RELEASED FROM LC-33

DATE 07 December 1979

TIME 1530 MST

TRACKER COORDINATES (WSTM) X = 486,037.24 Y = 182,350.16 Z = 3977.30

NOTE: WIND DIRECTIONS ARE REFERENCED TO TRUE NORTH.

HEIGHTS ARE METERS AGL XX OR FEET AGL .

PILOT BALLOON MEASURED WIND DATA

TABLE 5

RELEASED FROM NICK

DATE 07 December 1979

TIME 1530 MST

TRACKER COORDINATES (WSTM) X = 470.734.56 Y = 255.775.64 H = 4126.57

NOTE: WIND DIRECTIONS ARE REFERENCED TO TRUE NORTH

STATION ALTITUDE 3989.00 FEET MSL
7 DEC. 79 1550 HRS EST
ASCENSION NO. 512

SIGNIFICANT LEVEL DATA

3410U20512
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 6

PRESSURE GEOMETRIC MILLIBARS	ALTITUDE MSL FEET	TEMPERATURE DEGREES CENTIGRADE	AIR DENSITY CENTIGRADE	REL. HUM. PERCENT
980.2	3089.0	17.2	-4.7	22.0
950.0	4961.2	14.5	-7.5	21.0
772.8	7572.3	8.5	-10.9	24.0
740.8	8718.4	7.7	-9.6	28.0
700.0	10243.2	4.6	-11.0	31.0
622.8	13344.4	-0.2	-14.9	32.0
604.2	14141.0	-7.9	-16.7	29.0
590.0	19019.0	-10.5	-30.8	17.0
440.6	22177.5	-17.6	-37.5	16.0
400.0	24527.7	-24.2	-42.2	17.0
392.0	28207.2	-34.8	-50.6	18.0
312.8	30232.8	-40.7		
300.0	31164.7	-43.0		
285.2	32265.7	-44.6		
264.8	33907.2	-48.1		
250.0	35153.3	-49.0		

STATION ALTITUDE 9989.00 FEET MSL
 7 DEC. 79 1550 HRS MST
 ASCENSION NO. 512

TABLE 7
 UPPER AIR DATA
 3410020512
 WHITE STANUS

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LON DEG

GEODETIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE DEGREES CENIGRADE	AIR DEWPOINT PERCENT	REL. HUM. PERCENT	SPEED OF SOUND METER KNOTS	DIRECTION DEGREES (TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
3989.0	880.2	17.2	-4.7	22.0	1054.1	664.4	150.0	4.1
4000.0	879.9	17.2	-4.7	22.0	1053.8	664.4	150.4	4.1
4500.0	864.2	15.8	-6.2	21.5	1040.2	662.8	167.0	4.6
5000.0	846.8	14.4	-7.6	21.0	1026.7	661.1	179.4	5.5
5500.0	833.5	13.3	-6.2	21.6	1012.2	659.8	188.2	6.5
6000.0	818.4	12.1	-2.8	22.2	948.0	658.5	197.0	6.4
6500.0	805.0	11.0	-9.5	22.8	944.0	657.1	207.0	6.2
7000.0	789.1	9.8	-10.1	23.3	910.2	655.8	229.0	5.4
7500.0	774.8	8.7	-10.3	23.9	906.6	654.4	295.0	2.6
8000.0	760.7	8.2	-10.4	25.5	940.6	653.9	300.2	3.0
8500.0	746.6	7.9	-7.8	27.2	924.5	653.5	298.1	3.5
9000.0	733.1	7.1	-6.9	28.6	909.8	652.7	281.6	5.0
9500.0	719.6	6.1	-10.3	29.5	898.4	651.5	271.3	6.3
10000.0	706.4	5.1	-10.8	30.5	883.1	650.3	261.8	7.3
10500.0	693.9	4.2	-11.4	31.1	869.5	649.3	250.9	6.6
11000.0	680.3	3.4	-12.0	31.2	855.7	648.3	241.0	10.1
11500.0	667.6	2.7	-12.6	31.4	842.2	647.4	234.9	11.0
12000.0	655.2	1.9	-13.2	31.6	828.8	646.5	230.0	11.8
12500.0	642.9	1.1	-13.8	31.7	815.7	645.6	231.1	11.0
13000.0	630.9	0.3	-14.4	31.9	802.7	644.6	233.3	10.3
13500.0	619.1	-0.3	-15.2	31.4	799.7	643.8	245.5	9.9
14000.0	607.5	-0.8	-16.3	29.5	776.1	643.3	267.4	9.9
14500.0	595.6	-1.6	-17.6	28.1	763.7	642.3	265.4	10.4
15000.0	584.4	-2.6	-19.0	26.9	751.6	641.1	266.6	11.3
15500.0	573.2	-3.6	-20.4	25.7	740.1	639.9	260.0	14.2
16000.0	562.2	-4.6	-21.8	24.4	728.6	638.7	255.3	17.0
16500.0	551.4	-5.5	-23.2	23.2	717.3	637.5	251.0	19.5
17000.0	540.6	-6.5	-24.7	22.0	706.1	636.3	248.3	21.2
17500.0	530.4	-7.5	-26.1	20.7	695.2	635.1	247.4	21.1
18000.0	520.2	-8.5	-27.6	19.5	684.4	633.9	240.7	21.3
18500.0	510.2	-9.5	-29.1	18.3	673.6	632.7	247.7	20.9
19000.0	500.4	-10.5	-30.7	17.0	663.4	631.5	246.1	20.8
19500.0	490.5	-11.6	-31.7	16.8	653.0	630.2	243.0	21.1
20000.0	480.6	-12.7	-32.8	16.7	642.8	628.6	240.7	21.7
20500.0	471.2	-13.6	-33.8	16.5	632.0	627.4	238.4	20.6
21000.0	461.9	-15.0	-31.8	16.4	623.0	626.1	239.4	20.3
21500.0	452.7	-16.1	-35.9	16.2	613.3	624.7	240.5	20.2
22000.0	443.7	-17.2	-36.9	16.1	613.8	623.3	240.1	21.4
22500.0	434.9	-18.5	-37.9	16.1	594.7	621.7	239.7	22.2
23000.0	425.9	-19.9	-39.0	16.3	593.8	620.0	239.5	21.3

STATION ALTITUDE 3449.00 FEET MSL
7 UTC. 79 1550 HRS MST
ASCENSION NO. 512

UPPER AIR DATA
3410020512
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LONG DEG

TABLE 7 (CONT)

GEODETIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE DEGREES CENTIGRADE	AIR DEPOINT PERCENT	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	DIRECTION DEGREES (TN)	WIND DATA KNOTS	INDEX OF REFRACTION
23500.0	417.3	-21.3	-40.0	16.6	517.1	618.3	239.6	20.3	1.000130
24000.0	406.8	-22.7	-41.1	15.8	568.5	616.6	241.0	19.2	1.000128
24500.0	400.3	-24.1	-42.1	17.0	560.1	614.8	243.1	18.1	1.000126
25000.0	392.0	-25.6	-43.5	17.1	551.5	613.0	246.7	17.2	1.000124
25500.0	383.8	-27.0	-44.4	17.3	543.0	611.2	250.7	16.3	1.000122
26000.0	375.7	-28.4	-45.5	17.4	534.8	609.5	255.5	15.5	1.000120
26500.0	367.8	-29.9	-46.7	17.5	526.6	607.7	258.0	14.7	1.000118
27000.0	360.9	-31.3	-47.8	17.7	518.6	605.9	259.6	13.6	1.000116
27500.0	352.5	-32.8	-49.0	17.8	510.7	604.0	257.0	12.8	1.000114
28000.0	345.0	-34.2	-50.1	17.9	503.0	602.2	248.7	12.4	1.000112
28500.0	337.6	-35.7	-52.0	15.4**	495.2	600.4	240.2	12.6	1.000111
29000.0	330.3	-37.1	-56.6	11.0**	487.4	598.5	232.6	13.6	1.000110
29500.0	323.1	-38.6	-61.8	6.5**	479.8	596.7	228.6	14.5	1.000107
30000.0	316.0	-40.0	-71.1	2.1**	472.2	594.8	225.8	15.2	1.000105
30500.0	309.1	-41.4			464.5	593.1	229.0	16.0	1.000103
31000.0	302.2	-42.6			456.7	591.5	229.3	17.3	1.000102
31500.0	295.5	-43.9			448.2	590.4	228.1	18.8	1.000100
32000.0	289.4	-44.2			439.5	589.5	225.9	21.0	1.000098
32500.0	282.4	-45.1			431.3	588.4	221.3	23.0	1.000096
33000.0	276.0	-46.1			423.6	587.0	220.6	24.4	1.000094
33500.0	269.9	-47.2			416.0	585.6			1.000093
34000.0	263.7	-48.2			408.3	584.3			1.000091
34500.0	257.7	-48.5			399.6	583.9			1.000089
35000.0	251.8	-48.9			391.1	583.4			1.000087

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 3989.00 FEET MSL
 7 DEC. 79
 1550 HRS MSL
 ASCENSION NO. 312

MANDATORY LEVELS
 3410020512
 WHITE SANDS

GEODETIC COORDINATES
 32.40043 LAT LEG
 106.37033 LON LEG

TABLE 8

PRESSURE MILLIBARS	GEOPOTENTIAL FLEET	TEMPERATURE DEGREES CENIGRADE	AIR DEWPONT DEGREES CENIGRADE	KELVIN. PERCENT	WIND DATA	
					DIRECTION DEGREES(TN)	SPEED KNOTS
850.0	4958.	14.5	-7.5	21.	178.5	5.4
800.0	6625.	10.7	-9.6	23.	210.4	5.5
750.0	8577.	7.9	-10.0	27.	303.9	3.2
700.0	10233.	4.6	-11.0	31.	257.5	7.9
650.0	12203.	1.6	-13.5	32.	230.4	11.5
600.0	14307.	-1.3	-17.1	29.	261.2	10.2
550.0	16564.	-5.7	-23.4	23.	250.4	19.9
500.0	1893.	-10.5	-30.8	17.	246.0	21.1
450.0	21623.	-16.4	-36.2	16.	240.4	20.5
400.0	24487.	-24.2	-42.2	17.	243.2	18.1
350.0	27524.	-33.2	-49.4	18.	254.4	12.7
300.0	31103.	-43.0	-	229.4		
250.0	35077.	-49.0	-			